

Moffat David  
 Form 3  
 December 23, 2010

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
 Section 17(a) of the Public Utility Holding Company Act of 1935 or Section  
 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

|   |         |                                      |   |  |
|---|---------|--------------------------------------|---|--|
| 1. Name and Address of Reporting Person * |         | 2. Date of Event Requiring Statement | 3. Issuer Name <b>and</b> Ticker or Trading Symbol  |  |
| Moffat David                              |         | (Month/Day/Year)                     | ION GEOPHYSICAL CORP [IO]   |  |
| (Last)                                    | (First) | (Middle)                             | 4. Relationship of Reporting Person(s) to Issuer  | 5. If Amendment, Date Original Filed(Month/Day/Year) |
|   |         |                                      |   |  |
| 2105 CITYWEST BOULEVARD, SUITE 400        |         |                                      | (Check all applicable)  |  |
| (Street)                                  |         |                                      | <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner<br><input checked="" type="checkbox"/> Officer <input type="checkbox"/> Other<br>(give title below)    (specify below)<br>SVP & GM- Operations |  |
| HOUSTON, TX 77042-2839                    |         |                                      | 6. Individual or Joint/Group Filing(Check Applicable Line)  |  |
| (City)                                    | (State) | (Zip)                                | <input checked="" type="checkbox"/> Form filed by One Reporting Person<br><input type="checkbox"/> Form filed by More than One Reporting Person   |  |

**Table I - Non-Derivative Securities Beneficially Owned**

| 1. Title of Security<br>(Instr. 4) | 2. Amount of Securities Beneficially Owned<br>(Instr. 4) | 3. Ownership Form:<br>Direct (D)<br>or Indirect (I)<br>(Instr. 5) | 4. Nature of Indirect Beneficial Ownership<br>(Instr. 5) |
|------------------------------------|--|---|--|
| Common stock                       | 6,882  | D   | ^  |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

SEC 1473 (7-02)

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

**Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security<br>(Instr. 4) | 2. Date Exercisable and Expiration Date<br>(Month/Day/Year) | 3. Title and Amount of Securities Underlying Derivative Security<br>(Instr. 4) | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security:<br>Direct (D) | 6. Nature of Indirect Beneficial Ownership<br>(Instr. 5) |
|---|---|--|--|---|--|
|   | Date Exercisable  | Title  |  |   |  |

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|                                      | Expiration Date                      | Amount or Number of Shares   | or Indirect (I) (Instr. 5) |
|--------------------------------------|--------------------------------------|------------------------------|----------------------------|
| Employee stock option (right to buy) | 02/23/2005 <sup>(1)</sup> 02/23/2014 | Common stock 25,000 \$ 6.42  | D Â                        |
| Employee stock option (right to buy) | 08/02/2006 <sup>(1)</sup> 08/02/2015 | Common stock 25,000 \$ 7.31  | D Â                        |
| Employee stock option (right to buy) | 09/01/2007 <sup>(1)</sup> 09/01/2016 | Common stock 15,000 \$ 9.97  | D Â                        |
| Employee stock option (right to buy) | 12/01/2007 <sup>(1)</sup> 12/01/2016 | Common stock 20,000 \$ 10.85 | D Â                        |
| Employee stock option (right to buy) | 09/01/2008 <sup>(1)</sup> 09/01/2017 | Common stock 25,000 \$ 14.19 | D Â                        |
| Employee stock option (right to buy) | 12/01/2008 <sup>(1)</sup> 12/01/2017 | Common stock 25,000 \$ 15.43 | D Â                        |
| Employee stock option (right to buy) | 12/01/2009 <sup>(1)</sup> 12/01/2018 | Common stock 26,000 \$ 3     | D Â                        |
| Employee stock option (right to buy) | 12/01/2010 <sup>(1)</sup> 12/01/2019 | Common stock 18,000 \$ 5.44  | D Â                        |
| Employee stock option (right to buy) | 03/01/2011 <sup>(1)</sup> 03/01/2020 | Common stock 50,000 \$ 4.58  | D Â                        |
| Employee stock option (right to buy) | 12/01/2011 <sup>(1)</sup> 12/01/2020 | Common stock 25,000 \$ 7.19  | D Â                        |

## Reporting Owners

| Reporting Owner Name / Address   | Relationships |           |                        |       |
|--|---------------|-----------|------------------------|-------|
|  | Director      | 10% Owner | Officer                | Other |
| Moffat David<br>2105 CITYWEST BOULEVARD<br>SUITE 400<br>HOUSTON, TX 77042-2839 | Â             | Â         | Â SVP & GM- Operations | Â     |

## Signatures

/s/ Debra A. Addington,  
attorney-in-fact

12/23/2010

\_\_Signature of Reporting Person

Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, see Instruction 5(b)(v).
- \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) The option became/becomes exercisable in four equal annual installments beginning on the date specified in Column 2.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, See Instruction 6 for procedure.

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